

### REMARKS

This Amendment is in response to the Office Action mailed on July 5, 2007. In the Office Action, claims 1-4, 7-14 and 18-20 were rejected and claims 5, 6 and 15-17 were objected to. The Applicant appreciates the Examiner's indication of allowable subject matter. With this Amendment, claims 1, 3-6, 8-12 and 14-20 were amended and claims 2, 7 and 13 were canceled, the specification is amended and a replacement FIG. 2 is submitted herewith. It is respectfully submitted that all pending claims 1, 3-6, 8-12 and 14-20 are in condition for allowance.

As a preliminary matter, the specification has been amended and a replacement FIG. 2 is submitted herewith. The amendments to the specification correct a grammatical error in the originally filed application as well as correct USPTO typographical errors in the corresponding patent application publication 2005/0125194. Replacement FIG. 2 has been submitted to clarify the drawing. Acceptance of these corrections is respectfully requested.

### *Claim Objections*

On page two of the Office Action, claims 2-6, 13 and 14-17 were objected to because of various informalities. Claims 2 and 13 are canceled and claims 3-6 and 14-17 have been amended. It is respectfully submitted that the objection to these claims can be withdrawn.

### *Claim Rejections*

#### **35 USC §112**

On page two of the Office Action, claims 7-11 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 has been canceled. Therefore, this rejection can be withdrawn. It is respectfully submitted that the Office Action fails to reject claims 7-11 under any of the cited references. Therefore, it is respectfully believed that the subject matter claimed in canceled claim 7 as well as pending claims 8-11 include allowable subject matter.

**35 USC §102(b)**

On page three of the Office Action, claims 1-4, 12-14 and 18-20 were rejected under 35 U.S.C. 102(b) as being anticipated by Thia et al. (US 2001/0038508, issued US Patent 6,690,533). Of these claims, claims 1, 12 and 18 are independent, claims 1, 3-4, 12-14 and 18-20 have been amended and claim 2 is canceled. It is respectfully submitted independent claims 1, 12 and 18 are in condition for allowance.

Claim 1 has been amended to incorporate features of canceled claims 2 and 7. Elements of canceled claim 7 were not rejected under the cited reference; therefore, it is believed that claim 7 includes allowable subject matter. Therefore, in one aspect, claim 1 is in condition for allowance as incorporating allowable subject matter. However, in another aspect, claim 1 is in condition for allowance for additional reasons. In particular, it is respectfully submitted that Thia et al. fails to teach or suggest all of the elements of claim 1.

The Examiner points to FIGS. 2 and 3, sections 0025 through 0030 and sections 0019 through 0023 of Thia et al. as showing elements of claim 1. FIG. 2 of Thia et al. illustrates a disc drive (10) in an X orientation. However, FIG. 2 fails to teach or suggest a first coordinate system that “intersects a pivot shaft of the actuator mechanism” as recited in claim 1. FIG. 3 of Thia et al. illustrates the disc drive (10) in a Y orientation. However, FIG. 3 fails to teach or suggest a second coordinate system that “intersects a pivot shaft of the actuator mechanism and has a y-axis in alignment with a longitudinal axis of a track accessing arm of the actuator mechanism” as recited in claim 1. Although FIG. 6 of Thia et al. illustrates an x and y axis intersecting at a pivot centre, Thia et al. fails to teach or suggest both “a first coordinate system” and “a second coordinate system” “that intersect a pivot shaft of the actuator mechanism” where the second coordinate system “has a y-axis in alignment with a longitudinal axis of a track accessing arm of the actuator mechanism” as recited in claim 1. Sections 0025 through 0030 of Thia et al. show the estimation of what quadrant of the x and y axis in FIG. 6 that imbalance torque is positioned. However, Thia et al. fails to teach or suggest a calculation of the center of gravity of the actuator mechanism in both “first x and y components of a first coordinate system” and “second x and y components of a second coordinate

system” as recited in claim 1. Sections 0019 through 0023 of Thia et al. show the calculation of imbalance torque. However, Thia et al. fails to teach or suggest “calculating a total mass unbalance of the actuator mechanism as a function of the first x and y components and second x and y components” as recited in claim 1.

It is respectfully submitted that for these reasons, claim 1 is in condition for allowance. It is respectfully submitted that claims 3-4 are also in condition for allowance at least based on their dependence on allowable claim 1.

Claim 12 has been amended to incorporate features of canceled claim 13 and features in the specification in paragraphs 28 through 39 of the patent application publication 2005/0125194. It is respectfully submitted that Thia et al. fails to teach or suggest all of the elements of claim 12.

The Examiner points to FIGS. 2 and 3, sections 0006, 0007, 0016, 0018, 0019, 0025 through 0030 and sections 0019 through 0023 of Thia et al. as showing elements of claim 12. Sections 0006, 0007, 0016, 0018 and 0019 of Thia et al. discuss the calculation of imbalance torque by obtaining values of voice coil motor current drawn by an actuator during track following when a disc drive is placed in three different orientations. However, Thia et al. fails to teach or suggest “obtaining a current drawn by a voice coil motor to calculate a center of gravity of the actuator mechanism in first x and y components of a first coordinate system” as recited in claim 12. Sections 0025 through 0030 show the estimation of what quadrant of the x and y axis in FIG. 6 that imbalance torque is positioned. However, Thia et al. fails to teach or suggest “calculating the center of gravity of the actuator mechanism in second x and y components of a second coordinate system as a function of an angle between a track accessing arm of the actuator mechanism and a y-axis of the first coordinate system” as recited in claim 12. Instead, sections 0025 through sections 0030 utilize the relationships between obtained values of voice coil motor current to make estimated position deductions. Sections 0019 through 0023 of Thia et al. show the calculation of imbalance torque. However, Thia et al. fails to teach or suggest “calculating the mass unbalance of the actuator mechanism as a function of the first x and y components and second x and y components” as recited in claim 12.

It is respectfully submitted that for these reasons, claim 12 is in condition for allowance. It is respectfully submitted that claim 14 is also in condition for allowance at least based on its dependence on allowable claim 12.

Claim 18 has been amended to incorporate features of canceled claims 2 and 7. It is respectfully submitted that Thia et al. fails to teach or suggest all of the elements of claim 18.

FIG. 6 of Thia et al. illustrates an x and y axis intersecting at a pivot centre and sections 0025 through 0030 of Thia et al. show the estimation of what quadrant of the x and y axis in FIG. 6 that imbalance torque is positioned. However, Thia et al. fails to teach or suggest a means for determination of the center of gravity of the actuator mechanism in both "first x and y components of a first coordinate system" and "second x and y components of a second coordinate system" as recited in claim 18.

It is respectfully submitted that for these reasons, claim 18 is in condition for allowance. It is respectfully submitted that claims 19-20 are also in condition for allowance at least based on their dependence on allowable claim 18.

It is respectfully submitted that all pending claims 1, 2-6, 8-12 and 14-20 are in condition for allowance. Favorable action is requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to deposit account No. 23-1123.

Respectfully submitted,

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